

REMARKS

By the present Amendment, claims 1-10 are cancelled and claims 11-24 are added. This leaves claims 11-24 pending in the application, with claim 11 being independent.

Substitute Specification

The specification is revised to eliminate grammatical and idiomatic errors in the originally presented specification. The number and nature of the changes made in the specification would render it difficult to consider the case and to arrange the papers for printing or copying. Thus, the substitute specification will facilitate processing of the application. The substitute specification includes no "new matter". Pursuant to M.P.E.P. § 608.01(q), voluntarily filed, substitute specifications under these circumstances should normally be accepted. A marked-up copy of the original specification is appended hereto.

Rejections Under 35 U.S.C. § 102 and § 103

Claim 11 covers a device for damping pressure surges in a fluid comprising a housing 10, a spring-type accumulator 12 in the housing, a first piston 14 and a second piston 24. The housing has a longitudinal axis 32 and a connecting piece 26. The first piston is displaceable in the housing against pretensioning forces of the accumulator. The second piston is displaceable in the connecting piece along the longitudinal axis. The first and second pistons are mechanically uncoupled such that they can be separated relative to one another. The accumulator biases the first piston such that the first piston exerts a compressive force on the second piston and the two pistons are in constant contact with one another in all positions of the two pistons. The first and second pistons are in a non-overlapping arrangement and extend in opposite directions from their abutting surfaces. An anti-loss device 34 is attached to the connecting piece at a side of the second piston remote from the first piston.

By forming the device in this manner, the device can be easily made and be of compact construction, while being able to withstand very high system pressures and effectively damping pressure surges.

Claims 1, 2, 6-8 and 10 stand rejected under 35 U.S.C. § 102 in various combinations as being anticipated by EP 1 217 201 to Fierro, published U.S. Application 2003/0183197 to De Ojeda, U.S. Patent No. 5,701,869 to Richardson or U.S. Patent No. 4,456,233 to Felhofer. No comments are provided in the Office Action in support of these rejections.

Claims 1, 5-8 and 10 stand rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,148,834 to Reinartz. The Reinartz patent is cited for a damping device comprising a housing 4 and a piston 3 movable in the housing and biased by a spring 1 and operating in conjunction with another piston 2. The other piston is allegedly guided longitudinally in a connecting piece 12 and has an annular groove with a sealing element 27. A leakage opening 23 is allegedly provided in the housing to communicate with the fluid space between the pistons via an opening in the piston bottom.

Claims 1-3, 5, 7, 8 and 10 stand rejected under 35 U.S.C. § 102 as being anticipated by or under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 4,799,048 to Goshima. The Goshima patent is cited for a damping device comprising a housing 9, a piston 6 movable in the housing and biased by a spring 7. Piston 6 allegedly cooperates with another piston 1 displaceable longitudinally in a connecting piece at the right hand end of housing 9. The other piston allegedly has an annular groove containing seal 16, with a gap allegedly formed between the other piston and the opening. Piston 6 at 6c is allegedly several times greater than the diameter of piston 1. The piston 1 is alleged to be a stamp and guided by an anti-loss device 2 through a housing opening. The Goshima spring is allegedly helical and extends between the piston and cover element 10 attached to the housing by threads. Forming the cap to extend into

the housing 13 alleged to be obvious. The machining of the other piston is also alleged to be obvious.

The Fierro patent discloses a device with two pistons 8 and 9 with an intermediate compression spring 12 biasing the pistons in opposite directions. This patent does not anticipate or render obvious an accumulator biasing the first piston such that the first piston exerts a compressive force on the second piston and are in constant contact with one another, as recited in claim 11. Thus, the Fierro patent does not anticipate or render obvious the subject matter of claim 11.

Relative to the De Ojeda patent, no specific pistons are identified as being related to the claimed first piston and second piston. Based on the paragraphs referenced, apparently, the dual acting piston comprising two coupled pistons 116 and 126 is apparently being compared to the claim limitations relative to the first and second pistons. However, the De Ojeda pistons 116 and 126 are directly mechanically coupled and are separated from one another by such coupling. In this manner, the De Ojeda patent does not anticipate or render obvious the claim 11 limitation of the pistons being uncoupled and biased against one another. Also, the De Ojeda patent does not have the anti-loss device recited in claim 11.

Relative to the Richardson patent, the spool 69 of Fig. 6 and 7 appears to be cited. This spool has three pistons 62, 64 and 66 connected and directly mechanically coupled by common shaft 68. Thus, the pistons are not mechanically coupled, as required in claim 11. Also, no anti-loss device is provided. Further, the first piston is not biased against the second piston to provide constant contact therebetween. Thus, claim 11 is not anticipated or rendered obvious by the Richardson patent.

Relative to the Felhofer patent, apparently ram 37 is cited relative to the claimed first piston and the piston 35 is relied upon relative to the claimed second piston. However, the Felhofer ram 37 is part of its reservoir piston 35 such that these two parts form only a single

piston or are mechanically coupled to one another. The Felhofer ram does not exert a compressive force on the second piston with the pistons being in constant contact with one another as a result of that biasing force. Further, there is no anti-loss device, as recited in claim 11. Thus, the Felhofer patent does not anticipate or render obvious the subject matter of claim 11.

Relative to the Reinartz patent, piston 3 appears to be cited relative to the first claimed piston and piston 2 is apparently cited relative to the claimed second piston. As clearly shown in Fig. 2 of the Reinartz patent, these two pistons are in an overlapping arrangement and do not have opposite ends extending from their abutting surfaces. Thus, the Reinartz patents does not anticipate or render obvious the claim 11 limitation of the first and second pistons being in a non-overlapping arrangement and extending in opposite directions from their abutting surfaces. Moreover, this device admittedly does not have the anti-loss device as claimed since the Reinartz patent is not applied against original claim 3.

Relative to the Goshima patent, piston rod 6 is relied upon relative to the claimed first piston and imperforate piston 1 is relied upon relative to the claimed second piston. However, the Goshima piston rod, including its front end 6a, is received within the recess 1a of piston 1 to produce an overlapping relationship of the piston rod 6 and piston 1. Such overlapping relationship does not anticipate or render obvious the claim recitation of the first and second pistons being in a non-overlapping arrangement and extending in opposite directions from their abutting surfaces.

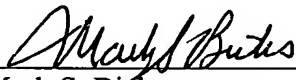
Accordingly, claim 11 is not anticipated or rendered obvious by the six different patents cited and applied against the original claims pending in this application.

Claims 12-24, being dependent on claim 11, are also allowable for the above reasons. Moreover, these dependent claims recite additional features, further distinguishing them over the

cited patents. Specifically, the relative diameters of the first and second pistons of claim 12, the configuration of the second piston as a stamp inserted into a housing opening of claim 13, the machining of the second piston and the gap of claim 14, the annular lubricating grooves of claim 15, the leakage opening of claim 16, the accumulator of claims 17-19, the inside cover element of claim 20, the cover element in the form of a retaining plate inside the housing of claim 21, the accumulator extension of claim 22, the cover element in the form of a screw cap of claim 23, and the relative diameters of the connecting piece in the remaining portion of the housing of claim 24, particularly within the overall claimed combination.

In view of the foregoing, claims 11-24 are allowable. Prompt and favorable action is solicited.

Respectfully submitted,



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